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First Named Inventor	Chin-Pang Kwok
Title	Suction-Adhesive Device
Serial No.	
Filing Date:	
Examiner:	
Group Art Unit:	
Attorney Docket Number	CHU/261/US
Date	July 23, 2003

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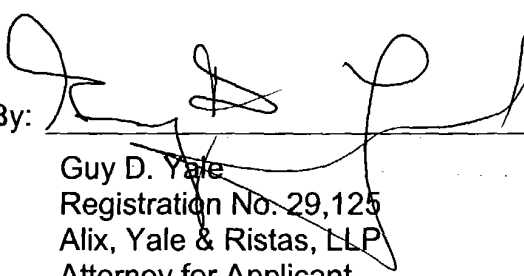
Applicant claims priority from Application No. 03102213.4 filed March 26, 2003 in Hong Kong. A certified copy of the priority application is enclosed.

Applicant claims priority from Application No. 02105663.3 filed August 1, 2002 in Hong Kong. A certified copy of the priority application is enclosed.

Respectfully Submitted,

Chin-Pang Kwok

By:

  
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Our Ref: CHU/261/US

**SIGNATURE OF APPLICANT, ATTORNEY OR AGENT**

Firm or  
Individual name

 Guy D. Yale

Reg. No.

29,125

Signature

Date

July 23, 2003

Attorney's Docket No.

CHU/261/US

EV283594945US



PATENTS ORDINANCE

Chapter 514

Laws of the Hong Kong Special Administrative Region

The attached is a true copy of the application documents of Short-term Patent No. HK1045787 specified below:

- (i) the Patents Form P6 filed on 1 August 2002;
- (ii) the specification filed on 1 August 2002; and
- (iii) the English abstract filed on 1 August 2002.

Dated this 11th day of July 2003.

  
(YIP CHIU YING RITA)

Intellectual Property Examiner  
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# INTELLECTUAL PROPERTY DEPARTMENT

Patents Form P6  
Version 2002  
Fee No. 6

Patents Ordinance  
(Chapter 514)

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Application No.

02105663.3

Accorded filing date

- 1 AUG 2002

## Request for Grant of a Short-Term Patent

Patents Ordinance sections 113, 116, 125

Patents (General) Rules sections 58, 74


(See the notes on the last page of this form)

01 Your reference	I09396
<b>02 Applicant's details</b> (see note (4)(a))  Name (underline surname) Name in Chinese (if applicable)  Address  Telephone -- Fax --  Kind of incorporation Country of incorporation State of incorporation (if applicable)	Golden Peak Plastic Works Limited 金峰塑膠製品有限公司 4/F., Yau Tong Industrial Bldg., Block 1, 2 Shung Shun Street, Yau Tong, Kowloon, Hong Kong. -- -- Limited Liability Company Hong Kong
<b>03 Title of invention</b> (see note (4)(b))  English  Chinese	Suction-adhesive Device -- Rec (3)

<b>04 Details of International Patent Classification</b> <i>(see note (5))</i>	IPC Code F16B, A47G A45D 42/14 <i>rel 6</i>		IPC Edition No. 7 <sup>th</sup> Edition
<b>05 Use of micro-organisms</b> <i>(tick the appropriate box)</i> <p>(a) Does the invention require the use of a <b>micro-organism</b> for its performance?</p> <p>(b) If you have ticked "Yes", please indicate whether the micro-organism is available to the public at the date of filing of the application; and whether the micro-organism is described in the application or the specification of the patent in such a manner as to enable the invention to be performed by a person skilled in the art.</p> <p>(c) If you have ticked "No" in <b>both</b> boxes in (b), please give the following details:</p> <p>Name and address of the depositary institution where a culture of the micro-organism is deposited</p> <p>Date of deposit  <i>(Day/Month/Year)</i></p> <p>Accession No. of the deposit  <i>(section 73 and Schedule 1, Patents (General) Rules)</i></p>	<div> <input type="checkbox"/> Yes    <input checked="" type="checkbox"/> No </div> <div> <input type="checkbox"/> Yes    <input type="checkbox"/> No </div> <div> <input type="checkbox"/> Yes    <input type="checkbox"/> No </div> <div> Name:  Address: </div> <div> </div> <div> </div>		
<b>06 Details of international application</b> If the short-term patent application is based on <p>(a) International Application No.</p> <p>(b) International Filing Date  <i>(Day/Month/Year)</i></p> <p>(c) International Publication No.</p> <p>(d) International Publication Date  <i>(Day/Month/Year)</i></p> <p>(e) Date of entry into the national phase in the People's Republic of China  or  Date of issuance of the National Application Notification by the State Intellectual Property Office</p> <p><i>(tick the appropriate box and enter the date in the space provided)</i></p>	<div>N/A</div> <div> <input type="checkbox"/> _____  <i>(Day/Month/Year)</i> </div> <div> <input type="checkbox"/> _____  <i>(Day/Month/Year)</i> </div>		

<p>(f) Application No. of the Chinese patent application (if known)</p> <p><i>(section 125, Patents Ordinance and section 78, Patents (General) Rules)</i></p>									
<p><b>07 Details of earlier application</b> If the application is divided or derived from an earlier Hong Kong application</p> <p>(a) Section under which an earlier application is claimed <i>(see note (6))</i> <i>(tick the appropriate box)</i></p> <p>(b) Earlier Application No.</p> <p>(c) Earlier Application Filing Date <i>(Day/Month/Year)</i></p>	<p style="text-align: center;">Patents Ordinance</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <input type="checkbox"/> section 116         </div> <div style="text-align: center;"> <input type="checkbox"/> section 55         </div> </div> <p>N/A</p>								
<p><b>08 Details of the priority application</b> If a statement of claim of priority under section 111, Patents Ordinance is made <i>(sections 58(5)(c), 69, Patents (General) Rules)</i></p>	<p><b>Statement</b></p> <p>N/A</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Country</th><th style="width: 33%;">Priority Application No.</th><th style="width: 33%;">Priority Application Filing Date</th></tr> </thead> <tbody> <tr> <td style="height: 40px;"></td><td></td><td></td></tr> </tbody> </table>			Country	Priority Application No.	Priority Application Filing Date			
Country	Priority Application No.	Priority Application Filing Date							
<p><b>09 Details of inventor</b> <i>(see note (4)(a))</i> <i>(see note (7))</i></p> <p style="text-align: right;">Name <i>(underline surname)</i></p> <p style="text-align: right;">Name in Chinese <i>(if applicable)</i></p> <p style="text-align: right;">Address</p>	<p>Kwok Chin Pang</p> <p>郭展鵬</p> <p>4/F., Yau Tong Industrial Bldg., Block 1, 2 Shung Shun Street, Yau Tong, Kowloon, Hong Kong.</p>								
<p><b>10 Non-prejudicial disclosure</b> If the applicant is making a claim regarding non-prejudicial disclosure under section 109, Patents Ordinance, please provide a statement giving details relating to such disclosure. <i>(see note (8))</i></p>	<p><b>Statement</b></p> <p>N/A</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Name and place of the exhibition or meeting</th><th style="width: 33%;">Opening date of the exhibition or meeting</th><th style="width: 33%;">Date of first disclosure</th></tr> </thead> <tbody> <tr> <td style="height: 40px;"></td><td></td><td></td></tr> </tbody> </table>			Name and place of the exhibition or meeting	Opening date of the exhibition or meeting	Date of first disclosure			
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<b>11</b> If a request for deferral of grant under section 119, Patents Ordinance is required, please tick the box and enter the period of such deferral. <i>(the period of deferral should not exceed 12 months)</i> <i>(if the box is not ticked, it will be taken that deferral of grant is not requested)</i>	<div style="display: flex; align-items: center;"> <input style="margin-right: 10px;" type="checkbox"/>         Request for deferral of grant up to _____  <div style="text-align: right; margin-left: 100px;"><i>(Day/Month/Year)</i></div> </div>																														
<b>12</b> Enter the no. of sheets for any of the following documents you are filing with this form  (a) Continuation sheet for the request  (b) Description  (c) Claim(s)  (d) Drawing(s)  (e) Abstract <i>(in both English and Chinese)</i>  (f) Priority document(s)  (g) Translation of the priority document(s)  (h) Search Report  (i) Translation of the Search Report  (j) In the case of an international application, copy of : (i) the international application as published by the International Bureau (ii) the international search report (iii) translation as published by the State Intellectual Property Office (iv) publication of information by the State Intellectual Property Office concerning the international application  (k) Statement of inventorship on Patents Form P7 in accordance with section 113(2)(c), Patents Ordinance and section 65, Patents (General) Rules <i>(see note (7))</i>  (l) Others <i>(please specify)</i>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center; padding: 5px;">No. of sheets</th> </tr> </thead> <tbody> <tr><td style="width: 40px;">--</td><td></td></tr> <tr><td>8</td><td></td></tr> <tr><td>2</td><td></td></tr> <tr><td>3</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>--</td><td></td></tr> <tr><td>--</td><td></td></tr> <tr><td>--</td><td></td></tr> <tr><td>--</td><td></td></tr> <tr><td>--</td><td></td></tr> <tr><td>--</td><td></td></tr> <tr><td>--</td><td></td></tr> <tr><td>4</td><td></td></tr> <tr><td>--</td><td></td></tr> </tbody> </table>	No. of sheets		--		8		2		3		1		--		--		--		--		--		--		--		4		--	
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<p><b>13</b>    <b>Name of agent</b> <i>(if you have one)</i></p> <p>Address for service in Hong Kong</p> <p>Telephone</p> <p>Fax</p> <p>Agent's code <i>(if known)</i></p>	<p>Victor Chu &amp; Co., Solicitors</p> <p>19th Floor, Tower II The Gateway Harbour City Kowloon Hong Kong</p> <p>2956-1818</p> <p>2956-1161</p>
<p><b>14</b>    I/We request the Registrar to grant a short-term patent.</p> <p>Signature</p> <p>Name of signatory</p> <p>Official capacity of signatory</p> <p>Date <i>(Day/Month/Year)</i></p>	 <p>VICTOR CHU &amp; CO., SOLICITORS</p> <p>agents for the applicant</p> <p>31/07/2002</p>

## Notes

- (1) Application on this form should be made in English. (Chinese forms are available if you wish to use Chinese.) The official language in which an application is filed is used as the language of proceedings in all proceedings before the Registrar.
- (2) Please complete this form in black ink or by typing.
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- (4) (a) If the name of the applicant and inventor are not in Roman letters, you need to give a transliteration in Roman letters.  
  
(b) You need to state the title of the invention in both **English and Chinese**.
- (5) Please give the designation of the classification of the invention according to the International Patent Classification up to the subclass level, also indicating the edition no. of the IPC used.
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(a) section 116, Patents Ordinance for divisional application;  
  
(b) section 55, Patents Ordinance for new application filed on court order upon determination of right to patent after grant.
- (7) If the applicant is not the sole inventor or the applicants are not the joint inventors, a statement identifying the inventor(s) and indicating the derivation of the applicant's entitlement to exercise his right to the short-term patent shall be made on Patents Form P7 and a sufficient no. of copies of the form should be filed to enable the Registrar to send one to each inventor who is not one of the applicants (section 113(2)(c), Patents Ordinance and section 65, Patents (General) Rules).
- (8) Please refer to section 109, Patents Ordinance and sections 58(5)(e), 58(5)(f), 70, Patents (General) Rules for such claim of non-prejudicial disclosure.
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- (10) **Use of individual's personal data:** Personal data provided by means of this form will be used by the Intellectual Property Department and can be disclosed for purposes relating to the administration of the Patents Ordinance (Cap. 514). The personal data required by this form is necessary for processing your application. You can obtain information regarding access to and alteration of your personal data in accordance with the Patents Ordinance (Cap. 514) and Patents (General) Rules (Cap. 514C) by contacting the Registrar of Patents.



## Suction-adhesive Device

### Background of the Invention

5 The present invention relates to a suction-adhesive device. More particularly, although not exclusively, the invention relates to a device including a suction cup and a hook, typically for attachment to a bathroom wall tile, window or shower screen and from which articles such as a  
10 face washer, corded soap, a shower cap or other articles might be suspended.

It is known to use suction cup devices for securing items to a bathroom wall tile for example. Small soap dishes  
15 for example can comprise two such suction cups. The suction cups usually comprise a bulbous protrusion in the centre that passes through an aperture in the side of the soap dish. It is also known to provide suction cups with a hook from which items can be suspended. The hook might  
20 be integrally moulded with the cup or formed of a less-flexible material and attached to the cup.

The above and other known suction cup devices tend to hold more securely to a surface if the face of the  
25 suction cup, and/or the surface itself is moistened prior to attachment. Sooner or later however, air enters into the space between the cup and the surface and the device becomes detached and usually falls to the floor. This

invariably occurs without advance warning, as there is no obvious visual indication that air has entered the space.

#### Objects of the Invention

5

It is an object of the present invention to overcome or substantially ameliorate the above disadvantage and/or more generally to provide an improved suction-adhesive device.

10

#### Disclosure of the Invention

There is disclosed herein a suction-adhesive device comprising:

15

a suction cup,  
a stem extending from the suction cup,  
a body through which the stem extends,  
a spring interacting with the stem and the body for biasing the suction cup toward the body,

20

locking means interacting with the body and the stem for selectively fixing the stem with respect to the body against deformation of the spring.

25

Preferably the device further comprises a handle attached movably to the body and interacting with the locking means.

Preferably the device further comprises a visual indicator

fixed with respect to the stem for indicating when the spring has drawn the suction cup toward the body.

Preferably the visual indicator is attached to or formed  
5 integrally with the stem.

Preferably the visual indicator is a coloured ring.

Preferably the body includes a neck through which the stem  
10 extends and beyond which the coloured ring protrudes when the spring has drawn the suction cup toward the body.

Preferably the locking means comprises a slide plate having a tongue extending therefrom and a cam surface, and  
15 wherein there is attached to the handle a pawl engaging with the cam surface and wherein the neck has an aperture through which the tongue passes to interact with the stem.

Preferably the tongue interacts with an aperture in the  
20 coloured ring.

Preferably the handle is shaped like a hook.

Preferably the stem has a pushbutton against which the  
25 handle can press.

Brief Description of the Drawings

A preferred form of the present invention will now be described by way of example with reference to the accompanying drawings, wherein:

Figure 1 is a schematic perspective illustration of a suction-adhesive device,

10 Figure 2 is a schematic cross-sectional elevational view of the device taken at II-II in Figure 1, the device being in a first configuration,

Figure 3 is a schematic cross-sectional elevational view of the device of Figure 1, the device being in a second configuration,

Figure 4 is a schematic cross-sectional elevational view of the device of Figure 1, the device being in a third configuration, and

Figure 5 is a schematic parts-exploded perspective illustration of the device of Figures 1 to 4.

Description of the Preferred Embodiment

In the accompanying drawings there is schematically depicted a suction-adhesive device 10. The device 10  
5 comprises a body 11 typically moulded from rigid plastics material.

The body 11 includes a neck 16 through which a stem 19 extends. At the top of the stem 19 there is provided a  
10 pushbutton 13.

A coil spring 18 is situated beneath the pushbutton 13 and surrounds an upper portion of the stem 19. The bottom end of the compression spring 18 bears downwardly  
15 on the body 11 to bias the stem 19 upwardly.

Surrounding an upper portion of the compression spring 19 and affixed with respect to the pushbutton 13 is a coloured ring 17. Ring 17 can be glued or otherwise  
20 adhered to the downwardly projecting annular lip of the pushbutton 13.

The stem 19 has at its bottom a flange 20 to which there is attached a suction cup 14. Suction cup 14 is made of  
25 smooth, flexible material, such as rubber, silicon or other suitable flexible, substantially fluid-impervious material. The suction cup 14 has a release tab 15 extending from its periphery.

In the configurations depicted in Figure 2, the suction cup 14 is biased upwardly by the spring 18 toward the body 11.

5 Attached pivotally to the body 11 is a handle 12. The handle 12 is shaped like a hook. A pawl 26 extends through a pair of webs 29 formed integrally with the body 11. Each web 29 has a large aperture therethrough to enable free-spinning of the pawl 26. The pawl 26 is  
10 shaped to fit tightly within a key-way of the same shape formed in the handle 12. Pawl 26 moves in unison with the handle 12.

Situated between the webs 29 is a slide plate 23. Slide  
15 plate 23 has a cam surface 25 being the inside edge of an aperture therethrough. The pawl 26 extends through this aperture to engage with the cam surface 25.

The slide plate 23 has a tongue 24 passing through an  
20 aperture 22 in the neck 16 of the body 11. There is also provided an aperture 21 formed between the coloured ring 17 and the pushbutton 13 with which the tongue 24 can interact.

25 When in the configuration of Figure 2, the device has substantially no adhesive effect. To create an adhesive effect, the pushbutton 13 can be depressed. Such depression might be by pressing directly thereon with

one's thumb, or more typically by movement of the handle 12 to the position depicted in Figure 3. When the pushbutton 13 is depressed the suction cup 14 will be pushed away from the body 11 by neck 19. If the suction cup 14 is already placed against a tile for example and the pushbutton 13 is depressed by thumb-force for example, the device takes on the configuration of Figure 4. By design however, it is intended that the handle 12 be pushed down upon the pushbutton 13 prior to placement of the suction cup 14 against a surface.

When the handle 12 is pushed down such that the device takes on the configuration shown in Figure 3, the pawl 26 pushes against the cam surface 25 to thereby cause the tongue 24 to pass through both apertures 22 and 21. As a result, the stem 19 is locked down against compression of spring 18. The suction cup 14 can then be placed against a surface and the handle 12 can be lifted, whereupon the pawl 26 pulls back on the cam surface 25 to draw the slide plate away from the neck 16 to thereby release the tongue 24 from the aperture 21. As a result, the stem 19 snaps into the position depicted in Figure 4 by action of the compression spring 18. This produces a suction effect between the suction cup 14 and the surface against which it bears. The suction cup 14 and/or the surface against which it is to be adhered can be pre-moistened if desired.

Over time, air will leak into the space between the suction cup 14 and the surface to which it is attached. The spring 18 will cause the stem 19 to protrude gradually from the neck 16 and the coloured ring 17 will  
5 become visible. When this is noticed, one can easily push down upon the pushbutton 13 or press the handle 12 against the pushbutton 13 to expel air from the space between the suction cup 14 and the surface.

10 As the handle 12 is shaped like a hook, items can be suspended from it.

It should be appreciated that modifications and alterations obvious to those skilled in the heart are not  
15 to be considered as beyond the scope of the present invention. For example, rather than providing the visual means of indication upon the stem directly, a pin or other extension from the suction cup might pass through another part of the body 11.



CLAIMS:

1. A suction-adhesive device comprising:  
a suction cup,  
5 a stem extending from the suction cup,  
a body through which the stem extends,  
a spring interacting with the stem and the body for  
biasing the suction cup toward the body,  
locking means interacting with the body and the stem  
10 for selectively fixing the stem with respect to the body  
against deformation of the spring.
2. The device of Claim 1, further comprising a handle  
attached movably to the body and interacting with the  
15 locking means.
3. The device of Claim 1, further comprising a visual  
indicator fixed with respect to the stem for indicating  
when the spring has drawn the suction cup toward the body.  
20
4. The device of Claim 3, wherein the visual indicator  
is attached to or formed integrally with the stem.
5. The device of Claim 4, wherein the visual indicator  
25 is a coloured ring.
6. The device of Claim 1, wherein the body includes a  
neck through which the stem extends and beyond which the

coloured ring protrudes when the spring has drawn the suction cup toward the body.

7. The device of Claim 1, wherein the locking means  
5 comprises a slide plate having a tongue extending therefrom and a cam surface, and wherein there is attached to the handle a pawl engaging with the cam surface and wherein the neck has an aperture through which the tongue passes to interact with the stem.

10

8. The device of Claim 7, wherein the tongue interacts with an aperture in the coloured ring.

9. The device of Claim 1, wherein the handle is shaped  
15 like a hook.

10. The device of Claim 1, wherein the stem has a pushbutton against which the handle can press.

Suction-adhesive Device

ABSTRACT

5 A suction-adhesive device includes a suction cup, a stem  
extending from the suction cup, a body through which the  
stem extends and a spring interacting with the stem and  
the body for biasing the suction cup toward the body. A  
locking plate interacts with the body and the stem for  
10 selectively fixing the stem with respect to the body  
against deformation of the spring.

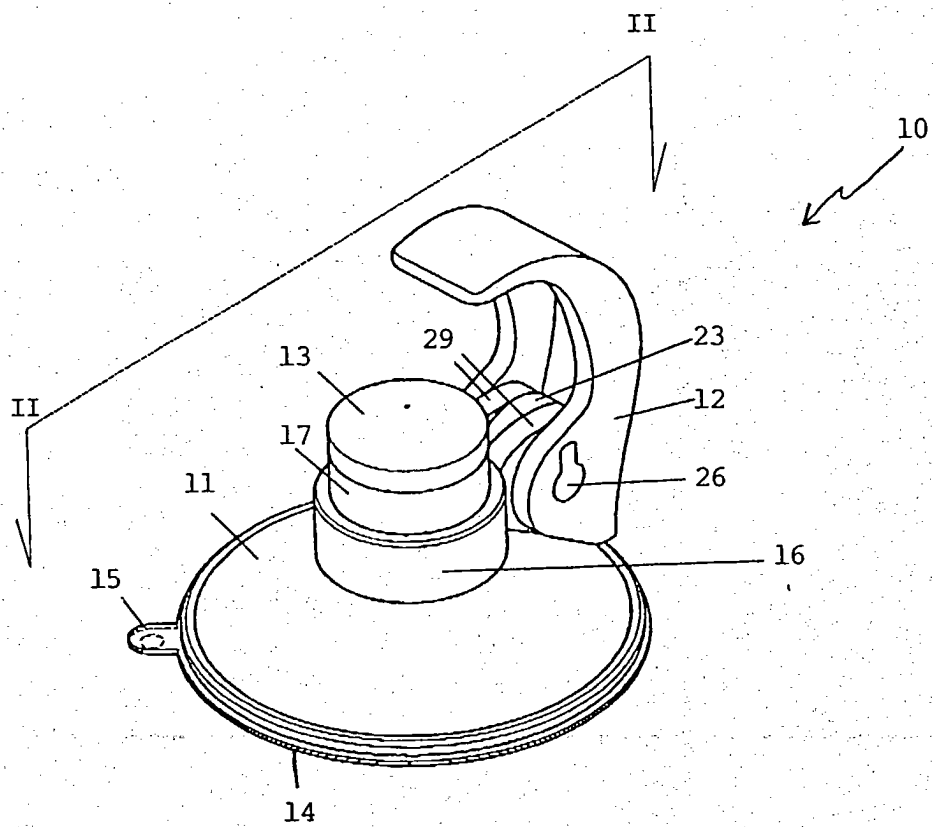


FIGURE 1

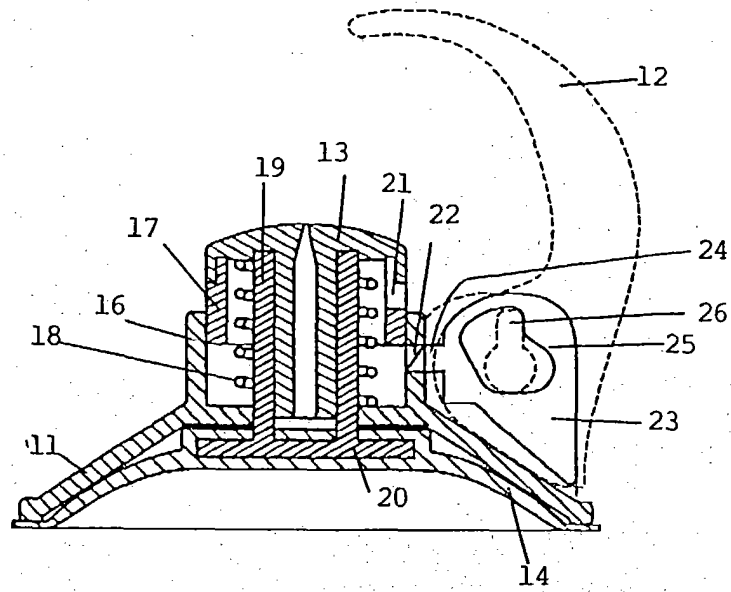


FIGURE 2

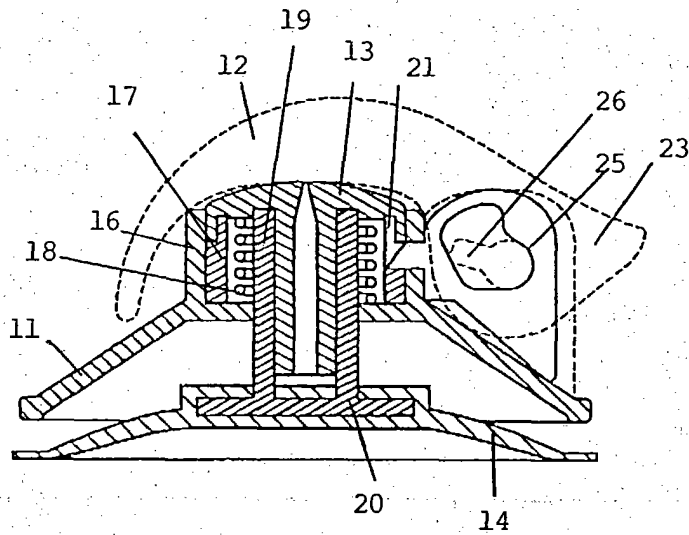


FIGURE 3

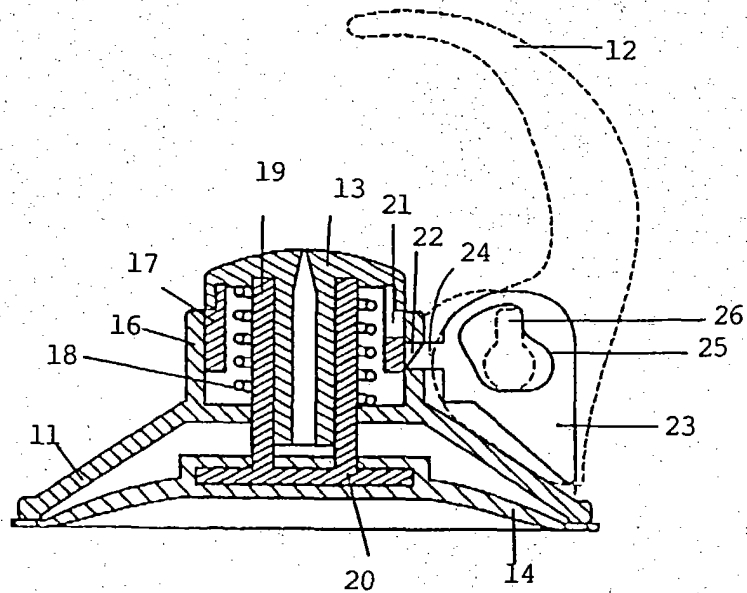


FIGURE 4

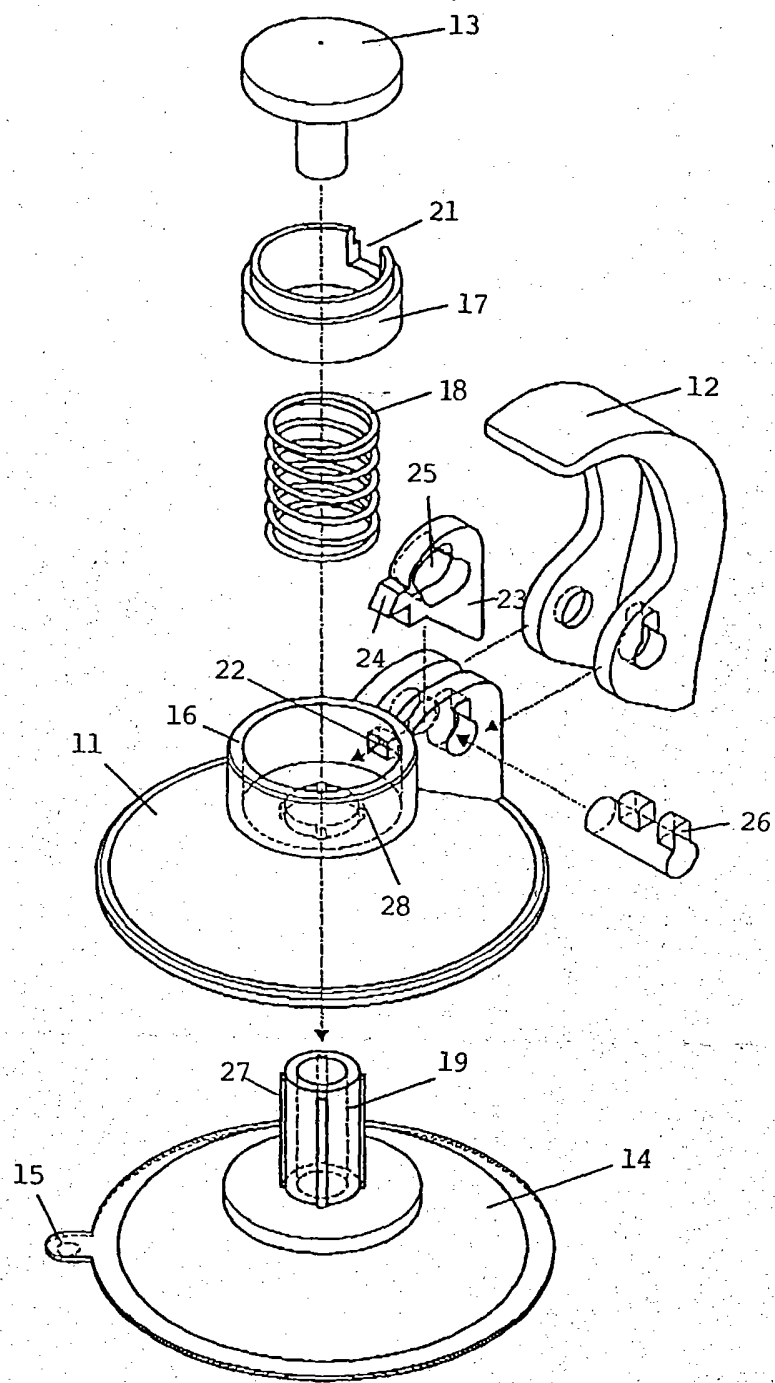


FIGURE 5